



North Carolina Department of Environment and Natural Resources
Division of Air Quality

Dimethyl sulfate

CAS

77-78-1

Current North Carolina AAL = 0.003 mg/m³ (24 hour, chronic toxicant)

AAL Documentation

The 1977 ACGIH TLV value for dimethyl sulfate was 1 PPM (equivalent to 0.52 mg/m³).

A factored TLV approach was used to derive a 24 hour chronic AAL for dimethyl sulfate.

In accordance with guidance provided by the North Carolina Academy of Sciences (1986/1987), the following uncertainty factors were used:

- Population variability : Factor of 10
- Time conversion (8 hour work day to continuous exposure): Factor of 4.
- Experimental uncertainty associated with chronic studies: Factor of 2.
- Severity of effect: Factor of 2 (dimethyl sulfate is a skin irritant and a confirmed animal carcinogen with unknown relevance to humans)

Total multiplicative uncertainty factor = 10 x 4 x 2 x 2 = 160

$$\text{mg/m}^3 \text{ dimethyl sulfate} = \frac{0.52 \text{ mg/m}^3}{160}$$

$$= 0.003 \text{ mg/m}^3$$

This information has been reconstructed using the decision matrix established by the North Carolina Academy of Sciences Air Toxics Panel, September, 1986.